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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,460	05/08/2001	Dagobert Michel De Leeuw	PHN 17 732	4381

24737 7590 03/17/2004

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER	
ZACHARIA, RAMSEY E	
ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/831,460	DE LEEUW ET AL.	
	Examiner	Art Unit	
	Ramsey Zacharia	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

2. Claims 9-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term "narrow" in claim 9 is a relative term which renders the claim and those that depend from it indefinite. The term "narrow" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Use of the term "narrow" renders the width of the tracks indefinite.

Claim Rejections - 35 USC § 103

4. Claims 1, 2, and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holdcroft et al. (U.S. Patent 5,561,030) in view of Jonas et al. (U.S. Patent 5,766,515) and Cogan (U.S. Patent 4,477,963).

Holdcroft et al. is directed to electrically conductive polymer patterns and processes for their formation (column 1, lines 10-16). Such electrically conductive polymer patterns have traditionally been used as electrodes or circuits in the electronics industry (column 2, lines 47-

54). The process comprises depositing a film of a π-conjugated polymer, irradiating the film in a pattern, removing the non-irradiated portions, and then oxidizing the film (column 3, lines 51-60). The π-conjugated polymer may be a 3,4-substituted polythiophene, such as a 3,4-alkoxythiophene (column 4, lines 47-59). The film may be deposited on a polymer sheet (column 4, lines 18-22). Dissolved oxygen is involved in initiating the photoreaction, i.e. the dissolved oxygen reads on a photochemical (column 10, lines 44-50). The process may be used to form a pattern with a resolution of 2 microns (column 12, lines 15-32). Holdcroft et al. apply the polymer film by casting a solution of the polymer in an organic solvent onto the substrate (column 11, lines 8-13).

Holdcroft et al. do not teach that the electrically conductive polymer is a polyacid salt of poly-3,4-alkoxythiophene. Moreover, while Holdcroft et al. teach that their process has a resolution of 2 microns, there is no explicit teaching that the lines of the pattern are spaced apart at a distance of 10 microns or less.

Jonas et al. teach a conductive material comprising a 3,4-dioxyalkylene substituted polythiophene wherein the alkylene group may be a C_{1-4} alkyl group, which includes methylene, ethylene, and propylene, and an organic compound comprising polyhydroxyl, dihydroxy, carbonyl, lactam, and/or amide groups (column 1, lines 25-48). The conductive material is used in areas requiring good electrical conductivity, such as in forming electrodes (column 3, lines 5-15). The conductive material is used in the cationic form so that it may be applied from an aqueous solution (column 2, lines 12-33). A polyacid, such as polystyrene sulfonic acid, may be used as the anion (claim 3). The process by which Jonas et al. forms their conductive material requires that it be filtered prior to use (column 5, lines 13-15).

Cogan discloses that it is known in the semiconductor industry to separate electrodes by only a few microns in devices operating at high frequency (column 1, lines 10-27). A spacing of 4 to 5 microns is cited as suitable (column 6, lines 1-26).

One of ordinary skill in the art would be motivated to use the filtered conductive composition comprising the anion of a 3,4-dioxyalkylene substituted polythiophene and organic compound as taught by Jonas et al. as the π-conjugated polymer of Holdcroft et al. so that the polymer will be soluble in water as opposed to organic solvents, thus leading to reduce costs environmental impact and cost associated with environmental regulations regarding the use of organic solvents.

Moreover, one of ordinary skill in the art would be motivated to select a spacing of the electrodes depending on the desired use of the finished product. In applications where the device is desired to operate at high frequencies, it would have been obvious to space the electrodes 4 to 5 microns apart. The distance between tracks, i.e. the space between the electrodes, is defined in the instant specification as the channel length (see page 4, lines 1-2).

Regarding claim 2, the limitations of this claim are taken to be met at least because it is directed to an optionally present material.

Therefore, the inventions of claims 1, 2, and 8-11 would have been obvious to one of ordinary skill in the art at the time the inventions were made.

5. Claims 1, 2, and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selbrede (U.S. Patent 5,319,491) in view of Jonas et al. (U.S. Patent 5,766,515).

Selbrede teaches an optical display device comprising a matrix of pixels (Column 5, lines 17-30). In one embodiment, each pixel comprises light guidance substrate, an elastomer layer, and a pair of interdigitated electrodes spaced 1 micron apart (column 10, lines 22-55). The distance between tracks, i.e. the space between the electrodes, is defined in the instant specification as the channel length (see page 4, lines 1-2). The device may further comprise a field effect transistor (column 13, lines 7-15).

Regarding claim 5, the device comprises a matrix of pixels, each one of which comprises a pair of interdigitated electrodes. This reads on the limitations of claim 5 since there must be some insulating material between the electrodes for the pixels to operate independently and the display device to function properly.

Selbrede does not teach forming the electrodes out of the salt of a poly (3,4-substituted thiophene), but rather uses indium-tin oxide as the material for the electrodes.

Jonas et al. teach a conductive material comprising a 3,4-dioxyalkylene substituted polythiophene wherein the alkylene group may be a C_{1-4} alkyl group, which includes methylene, ethylene, and propylene, and an organic compound comprising polyhydroxyl, dihydroxy, carbonyl, lactam, and/or amide groups (column 1, lines 25-48). The conductive material is used in areas requiring good electrical conductivity, such as in forming electrodes in electroluminescent and LCD displays (column 3, lines 5-15). The conductive material is used in the cationic form so that it may be applied from an aqueous solution (column 2, lines 12-33). A polyacid, such as polystyrene sulfonic acid, may be used as the anion (claim 3). The 3,4-

dioxyalkylene substituted polythiophene is used as a replacement for indium-tin oxide because it is simpler and less expensive to use (column 1, lines 5-23).

One of ordinary skill in the art would be motivated to use the anion of a 3,4-dioxyalkylene substituted polythiophene and polyacid as taught by Jonas et al. in place of the indium-tin oxide in the display device of Selbrede to reduce production costs of the resulting device.

Regarding claim 2, the limitations of this claim are taken to be met at least because it is directed to an optionally present material.

Regarding claim 8, replacing the indium-tin oxide in the electrodes with the 3,4-dioxyalkylene substituted polythiophene of Jonas et al. would result in a pixel that substantially consists of organic polymeric materials.

Therefore, the inventions of claims 1, 2, and 4-8 would have been obvious to one of ordinary skill in the art at the time the inventions were made.

Response to Arguments

6. Applicant's arguments filed 12 December 2003 have been fully considered but they are not persuasive.

Regarding the rejection over Holdcroft et al. in view of Jonas et al. and Cogan, the applicants argue that none of the references teach a channel length between tracks of 10 μm or less.

This is not persuasive because the difference between the invention as claimed and the article disclosed by the prior art appears to be merely a semantic difference. According to the

instant specification, electrodes may be "tracks" and the "channel length" is the distance between neighboring tracks (see page 3, line 30-page 4, line 2). Therefore, electrodes which are spaced at a distance of 10 μm or less read on tracks which are spaced apart to form channels having a length of 10 μm or less.

Regarding claim 9, the applicants argue that none of the references teach filtration to prevent the presence of foreign particles.

This is not persuasive because the claims recite only a filtration step, which is taught be the prior art. Moreover, since the composition is being filtered, it should intrinsically remove particles which would represent impurities that one skilled in the art would want removed.

Regarding the rejection over Selbrede in view of Jonas et al., the applicants argue that none of the references teach a channel length between tracks of 10 μm or less.

This is not persuasive for the reasons presented above. Namely this difference appears to be merely a semantic difference and that electrodes which are spaced at a distance of 10 μm or less read on tracks which are spaced apart to form channels having a length of 10 μm or less.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (571) 272-1516. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ramsey Zacharia
Primary Examiner
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